

What is claimed is:

Sub A1 ✓
5

1. A herbal chip comprising a plastic slide, a coating as a spacer on the plastic slide, and fractions or components obtained from herbs that are independently allocated in microarrays on the coating.

2. The herbal chip as claimed in claim 1, wherein the fractions or components obtained from herbs are homogeneous or heterogeneous.

10 3. The herbal chip as claimed in claim 1, wherein the fractions or components obtained from herbs are obtained by fractionating an extract of the herb by applying HPLC.

15 4. The herbal chip as claimed in claim 1, wherein the fractions or components obtained from herbs contain secondary metabolites of a herb.

20 5. The herbal chip as claimed in claim 1, wherein the material of the plastic slide is a polycarbonate, or a homopolymer or copolymer that is made of one or more monomers selected from the group consisting of ethylene, haloethylene, propylene, halopropylene, acrylate, methacrylate, butadiene, acrylonitrile, norbornene and styrene.

25 6. The herbal chip as claimed in claim 5, wherein the plastic slide is made of a polymer of styrene.

7. The herbal chip as claimed in claim 1, wherein the plastic slide has two cavity chambers.

30 8. The herbal chip as claimed in claim 1, wherein the plastic slide is pre-treated with a polyfunctional aldehyde followed by soaking in a solution of NH_2 group(s)-providing precursor before coating the plastic slide.

Sub A2
35

9. The herbal chip as claimed in claim 8, wherein the polyfunctional aldehyde is glutaldehyde.

10. The herbal chip as claimed in claim 8, wherein the NH_2 group(s)-providing precursor is NH_4OH .

09875361.060501
FO5090.19557960

11. The herbal chip as claimed in claim 1, wherein the coating is made of polyfunctional molecules.

5 12. The herbal chip as claimed in claim 11, wherein the polyfunctional molecule is a polyfunctional epoxide containing at least one epoxy group at each of its ends.

10 13. The herbal chip as claimed in claim 12, wherein the epoxy group(s) at one end of the polyfunctional epoxide react with the amino group(s) on the surface of the pretreated plastic slide.

14. The herbal chip as claimed in claim 12, wherein the epoxy group(s) at the other end of the polyfunctional epoxide react with the free hydroxyl, sulfhydryl or amino groups of the ingredients contained in herbs.

15 15. The herbal chip as claimed in claim 12, wherein the polyfunctional epoxide contains a long chemical chain of 6 to 24 carbon atoms.

20 16. A method of producing the herbal chip as claimed in claim 1, comprising the steps of preparing a plastic slide, coating the surface of the plastic slide with polyfunctional molecules, and spotting and immobilizing on the coated plastic slide a massive amount of samples in a gridded area in microarrays, wherein each of samples contains homogeneous or heterogeneous fractions or ingredients obtained from a herb.

25 17. The method as claimed in claim 16, wherein the plastic slide has two cavity chambers and the samples are spotted or immobilized on the surface of the cavity chambers.

30 18. The method as claimed in claim 16, wherein the plastic slide is pretreated with a polyfunctional aldehyde followed by soaking in a solution of NH_2 group(s)-providing precursor before coating the plastic slide.

19. The method as claimed in claim 18, wherein the polyfunctional aldehyde is glutaldehyde.

35 20. The method as claimed in claim 18, wherein the NH_2 group(s)-providing precursor is NH_4OH .

21. The method as claimed in claim 16, wherein the polyfunctional molecule is a

polyfunctional epoxide containing at least one epoxy group at each of its ends.

22. A method of using the herbal chip as claimed in claim 1 for screening for active ingredients contained in herbs, comprising the steps of loading a labeled probe(s)-
5 containing solution onto the herbal chip for conducting hybridization, and imaging and identifying the gridded samples that react with or bind to the labeled probe.

23. The method as claimed in claim 22, wherein the labeled probe(s)-containing
10 solution is homogeneous or heterogeneous.

24. The method as claimed in claim 22, wherein the label is a dye or a radioactive
material.

15

00875361.060501
105090 T0557860